MODEL FHC50/FHM10
FUME HOOD CONTROLLER/MONITOR

P/Ns 800940/800941/800942/800950/800951/800952

INSTALLATION INSTRUCTIONS

WARNING: The Model FHC50 Fume Hood Controller and Model FHM10 Fume Hood Monitor power input must be wired to 24 VAC maximum. Wiring the unit to 120 or 230 VAC will cause serious damage to the unit and void the warranty.

Download the Operation and Service Manual for the Model FHC50 Fume Hood Controller or Model FHM10 Fume Hood Monitor from our website, www.tsi.com.

The purpose of these instructions is to guide the installer through the installation of the Model FHC50 Fume Hood Controller or Model FHM10 Fume Hood Monitor. Please read these instructions thoroughly before beginning installation.

Included Parts

Description	Qty
FHxxx Controller or Monitor (depends on model)	1
Mounting Bracket	1
Mounting Screws (6-32 x ¼")	2
Installation Instructions	1

Fume Hood Controller / Monitor Part Numbers

Part Number	Description	Communications
800940	FHM10 Fume Hood Monitor	Modbus®, N2
800941	FHM10 Fume Hood Monitor w/BACnet®	Modbus®, N2, BACnet® MS/TP
800942	FHM10 Fume Hood Monitor w/LonWorks®	Modbus®, N2, LonWorks®
800950	FHC50 Fume Hood Controller	Modbus®, N2
800951	FHC50 Fume Hood Controller w/BACnet®	Modbus®, N2, BACnet® MS/TP
800952	FHC50 Fume Hood Controller w/LonWorks®	Modbus®, N2, LonWorks®

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BACnet is a registered trademark of ASHRAE.
LonWorks is a registered trademark of Echelon® Corporation.

Controller or Monitor Installation

NOTE: If using a Sidewall Velocity Sensor, the Sidewall Velocity Sensor and the Controller or Monitor must be mounted on the same side of the fume hood.

Mounting Bracket using Single Gang Electrical Box (Recommended Mounting Option)

1. Select the mounting location for the Controller or Monitor. The Controller or Monitor is typically mounted above the service controls (Figure 1).
2. Cut a hole at this location, sized to mount to a standard single gang electrical box, 2¼" (57.2mm) wide by 3¼" (82.6mm) long (Figure 1).
3. Mount a single gang electrical box in the cutout location (Figures 1 and 2).

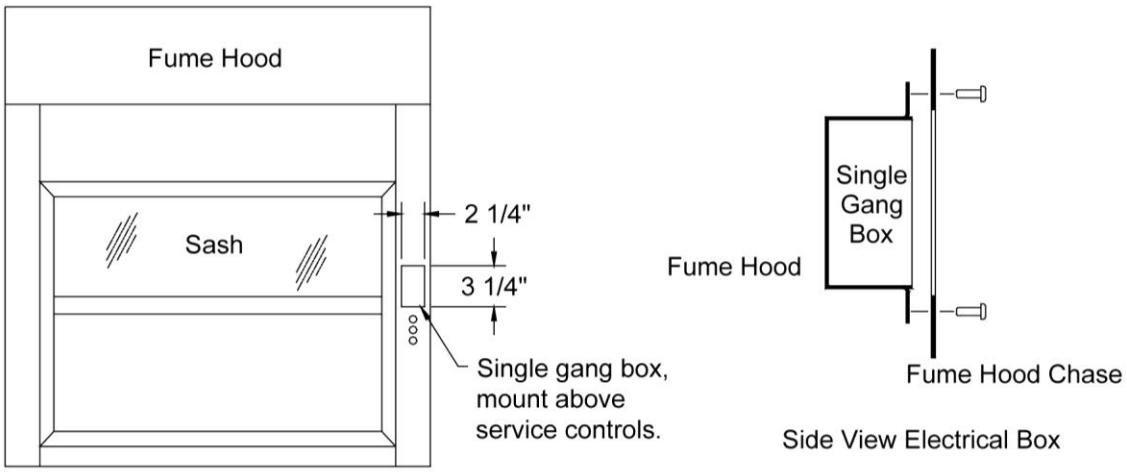

Figure 1: Mounting Location and Electrical Box

4. Attach mounting bracket to the electrical box using the two supplied screws (Figure 2).

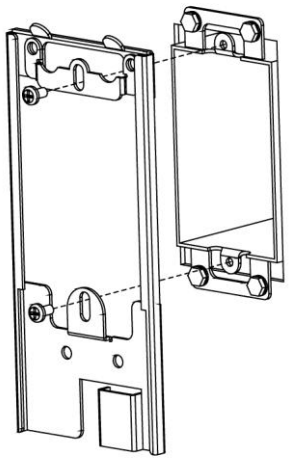

Figure 2: Attach Mounting Bracket to Electrical Box

Mounting Bracket without Electrical Box (Alternative Mounting Option)

1. Select the mounting location for the Controller or Monitor. The Controller or Monitor is typically mounted above the service controls (Figure 1).
2. Cut a hole at this location, 2¼" (57.2mm) wide by 3¼" (82.6mm) long (Figure 1).
3. Center the mounting bracket open area on the hole. Attach the mounting bracket to the fume hood front panel using four sheet metal screws (screws not provided) (Figure 3).

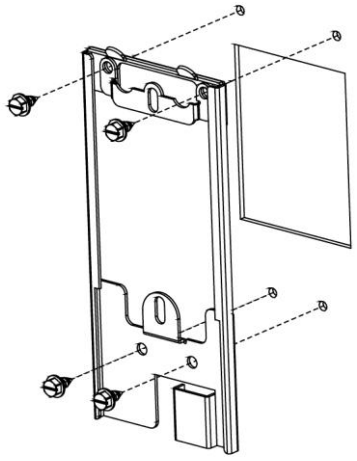

Figure 3: Attach Mounting Bracket to Fume Hood Front Panel

Attaching Controller or Monitor to Mounting Bracket

Position the top of the Controller or Monitor on the alignment tabs at the top of the bracket. Push down on the top of the case while pressing the bottom of the Controller or Monitor into the mounting bracket until it latches securely into place (Figure 4).

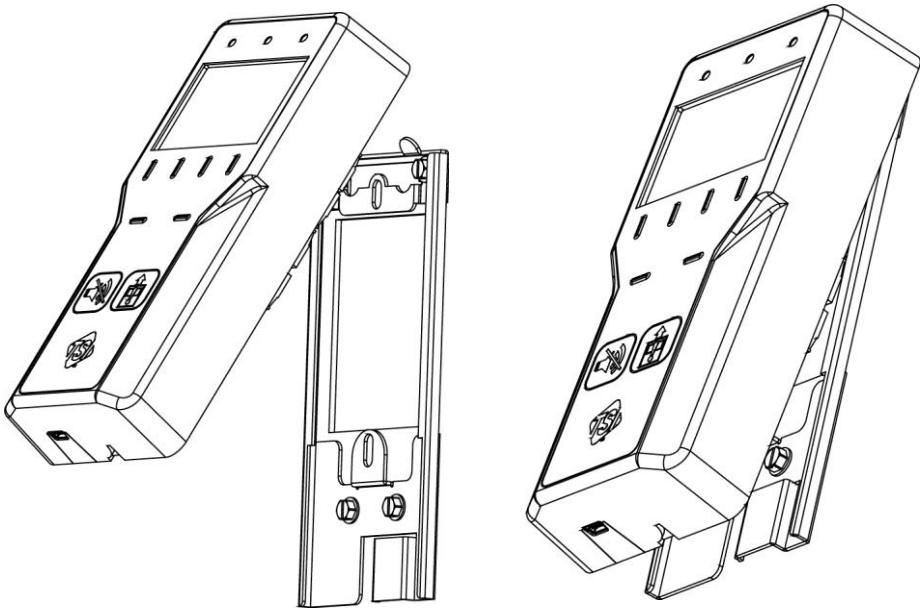

Figure 4: Attaching to the Mounting Bracket

Removing Controller or Monitor from Mounting Bracket

Insert a flat tip screwdriver into the bottom of the Controller or Monitor as shown. Turn the screwdriver clockwise to release the Controller or Monitor from the mounting bracket (Figure 5).

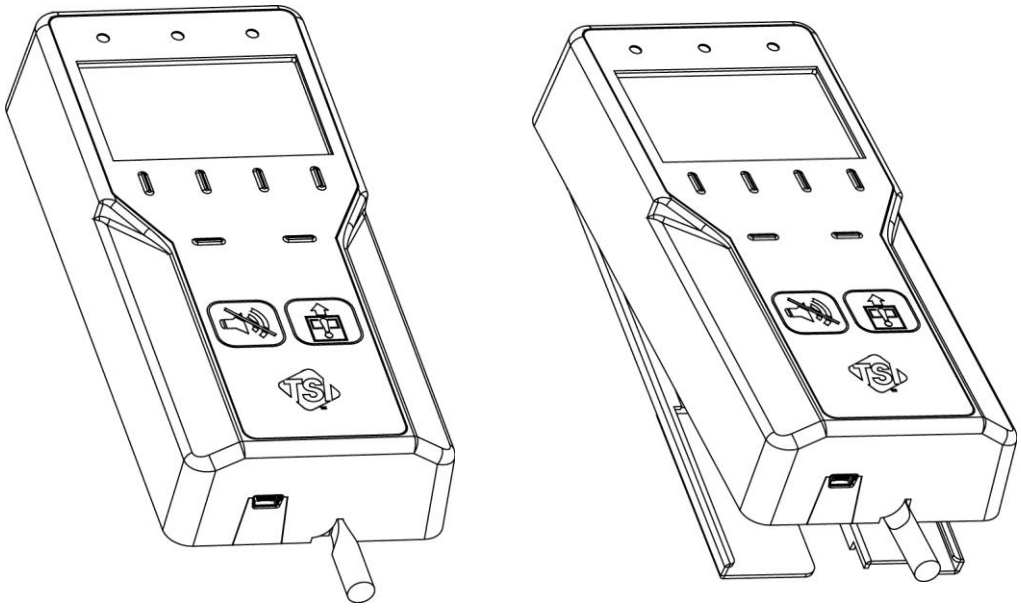

Figure 5: Removing from the Mounting Bracket

Installation Notes for Optional Accessories

800320 – Sidewall Velocity Sensor

If the 800320 Sidewall Velocity Sensor is being used, follow the instructions supplied with that equipment.

800920 - Slimline Display

If the 800920 Slimline Display Kit is being used, the Model FHC50 Fume Hood Controller or Model FHM10 Fume Hood Monitor most often will not be mounted to the fume hood front panel as described earlier in this installation guide. If this is the case, the Controller or Monitor should be mounted on top of the fume hood, or in any other convenient location. A good method to accomplish this is to use a standard single gang electrical box, and mount it to the desired location. Then attach the mounting bracket to the electrical box and the Controller or Monitor to the bracket as described earlier in this installation guide.

800925 – Vertical Sash Sensor

If the 800925 Vertical Sash Sensor is being used, follow the instructions supplied with that equipment.

800926 - Flush-Mount Bracket

The Model FHC50 Fume Hood Controller or Model FHM10 Fume Hood Monitor may alternatively be mounted to the fume hood front panel using the 800926 Flush-Mount Bracket Kit. If using this mounting style, please follow the mounting instructions supplied with the Flush-Mount Bracket Kit.

Controller or Monitor Wiring

WARNING:	The Model FHC50 Fume Hood Controller and Model FHM10 Fume Hood Monitor power input must be wired to 24 VAC maximum. Wiring the unit to 120 or 230 VAC will cause serious damage to the unit and void the warranty. Alternatively, if using an Electric Actuator, the Actuator DC power output may power the Controller or Monitor power input (15-40 VDC). Do **not** connect 24 VAC to any terminals other than the Controller or Monitor power input. Maintain polarity on all wiring connections. The Controller or Monitor **must** be wired exactly as the wiring diagram shows. Making modifications to the wiring may severely damage the unit. Do **not** apply external voltage to the RS485 ports, Analog Output, or Control Output. These are output voltage signals. Make sure no power is applied until all wiring is complete. Follow all applicable electrical codes, and have a qualified person perform all wiring.

1. Remove the connector blocks from the back of the Controller or Monitor.
2. Refer to the wiring diagram (Figure 6) for proper wiring procedures, and connect all necessary wiring to the connector blocks.
3. Plug in any cable connections for optional accessories (Velocity Sensor or Slimline Display) to the back of the Controller or Monitor.
4. Plug the wired connector blocks into the Controller or Monitor in the appropriate positions.
5. Attach the Controller or Monitor to the mounting bracket.

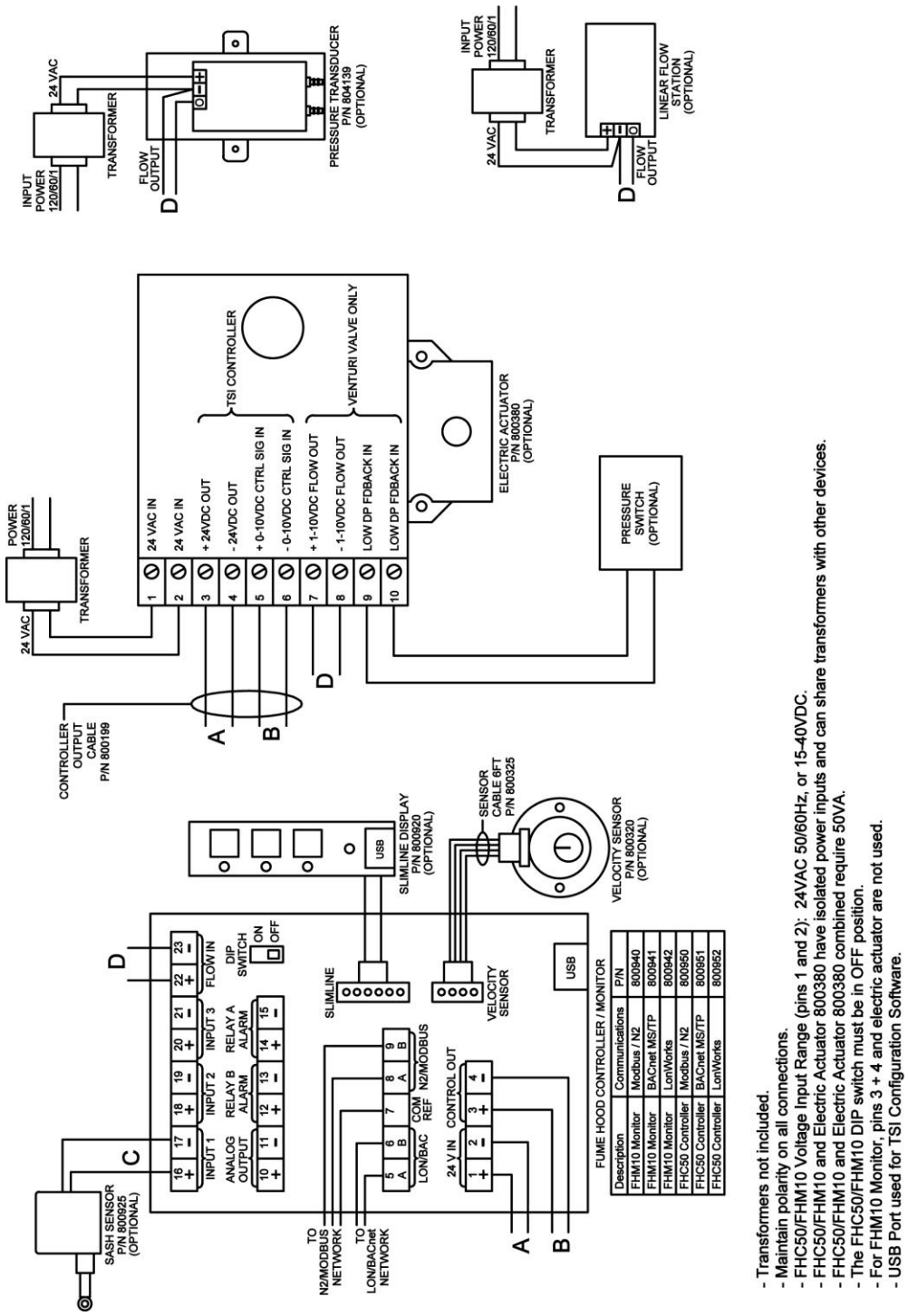

Figure 6: Controller or Monitor Wiring Diagram

UNDERSTANDING, ACCELERATED

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